IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Advanced Systems, Technologies, and Innovations for Human Spaceflight (7)

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THE HUMAN FACTORS OF YOUR CAR AND YOUR VIDEO GAME ARE DESIGNING NEW SPACE MISSIONS

Abstract

We will face in the near future an increase of complexity and a radical evolution in Human Spaceflight Missions. No matter if you are deeply trained astronaut or 'once-in-a-life' commercial flight space tourist, your 'Space experience' will include the use of visual interface, control keyboards, dashboards where Human Factors (HFs) will become of paramount importance and driver of a User Centered Design (UCD) approach. An experience 'designed' in a holistic, refined, 'well rounded' way can deliver the best 'meaning' for each technology and make life easy for users. A growing number of non-Space industries already conceive their products following a human-centered and holistic design approach, keeping in mind that the market will judge them through a multitude of touch-points and evaluation parameters: final users' experience, easy-to-use and easy-to-understand features are keys to success. The highest sophistication of HFs and UCD is represented by automotive and video gaming sectors, in which the user is perceived as an extremely complex subject (persona), whose psychophysical satisfaction is the result of an articulated set of correlated stimuli, features and technologies. Those sectors embed in the design phase the 'learning by doing' approach and have developed the ability (and the habit) to deliver high-level experience design balancing both rational and irrational needs. Human Spaceflight could learn a lot and take advantage from best practices and innovations such as immersive autonomous driving or gaming to design the future interplanetary exploration missions experience for professionals or tourists. Success in Human Spaceflight could lead to countless technology/design transfer opportunities on Earth if we consider task like training, safety, education, etc. This paper aims at: 1) broadly investigating the state-of-the-art techniques and UCD solutions adopted in the automotive and video gaming sectors; 2) highlighting how problems such as ENTERTAINMENT, ENGAGEMENT and ALIENATION have been addressed by these sectors and how their HFs driven solutions can be used in Human Spaceflights 3) proposing a "way-back from Spaceflights to Earth" through UCD driven applications/products for the benefit of human kind thus matching INSPIRATION (videogaming), INNOVATION (automotive) and DISCOVERY from space (Awareness).